New records of rare fish species for the Gulf of Cádiz

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INTRODUCTION

The Gulf of Cádiz represents an area with a high faunistic biodiversity due to the coexistence of species from different biogeografical regions (Lusitanian, Mediterranean, Mauritanian). The natural distribution of these species includes latitudinal (African and north Atlantic species) or longitudinal gradients (Mediterranean and anfiatlantic species). Information on the distribution/presence of species in the Gulf of Cádiz is scarce for deep-sea ones and it is of interest for biodiversity studies and further monitoring of global warming effects (colonization of species from lower latitudes), among others. During the scientific surveys INDEMARES/CHICA 0211 and ARSA 0311, carried out by the IEO on board R/V Cornide de Saavedra, some rare fish species were caught using diferent fishing gears such as otter-trawl and beam-trawl. Some of them represents first records for the Gulf of Cádiz area or the European margin.

Ophidiidae
Neobythitinae
Benthocometes robustus (Goode & Bean, 1886)

In february 2011 two specimens of *Benthocometes robustus* were collected in Hesperides Mud volcano with a beam-trawl during the "INDEMARES-CHICA 0211" cruise (14 mm and 94 mm, standard length (SL), 703-756 m depth, IEO-CD-CH11/506 and IEO-CD-CH11/507). Other components of the benthic-demersal community were the fishes *Caelorinchus caelorhincus, Nezumia aequalis, Hoplostethus mediterraneus* and *Lophius piscatorius;* the crustaceans *Nephrops norvergicus* and *Plesionika martia*; the mollusc *Asperarca nodulosa*; the cnidarians *Leiopathes glaberrima* and *Flabellum chunii,* and the porifera *Pheronema carpenteri.*

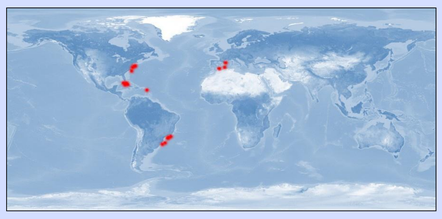
The genus *Benthocometes* was only represented by this anfiatlantic species (including the Mediterranean sea) until 2010 when another species (*B. australiensis)* was described off Nortwest Australia.

Diagnosis

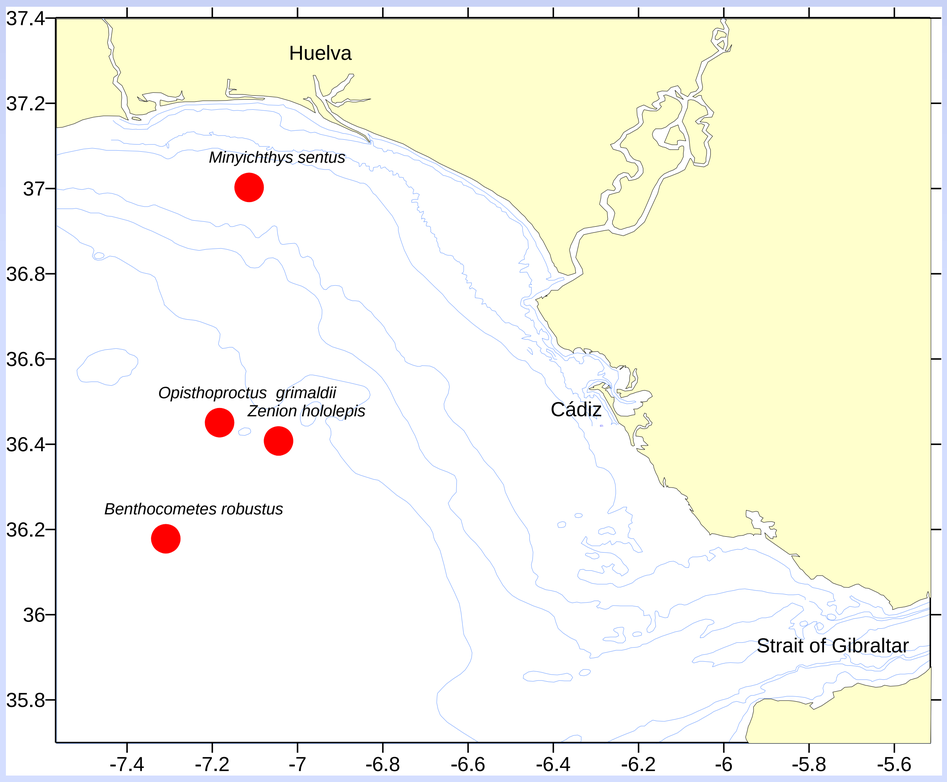
Body robust with a short, stubby head and a terminal mouth. Lateral line not reaching the base of caudal fin; head and body covered with small, overlapping scales. Operculum with 2 posteriorly directed spines. Dorsal finrays: 102-104; anal finrays: 82; pectoral finrays: 30; pelvic finrays: 2.

Distribution

B. robustus is an uncommon benthopelagic species frecuently associated with deep water coral communities. It has been previously reported in the western Atlantic from off Cuba and the Caribbean, along the northeast US coast and on the Brazilian continental slope. In the eastern Atlantic there are just a few records off Cape Bojador (north-western Africa) and throughout the Mediterranean. Some authors proposed that the disjunt distribution could be a result of a extended pelagic larval phase. Our specimens represent the first record of *B. robustus* in the Gulf of Cádiz and in the Atlantic waters of the Iberian Peninsula.

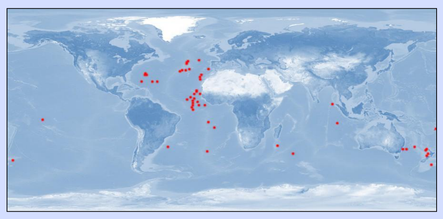


Distribution map of *Benthocometes robustus* worldwide (Froese & Pauly, 2011)



Map of the Gulf of Cádiz indicating the positions where the specimens were caught

Opisthoproctidae
Opisthoproctus grimaldii Zugmayer,1911



Distribution map of *Opisthoproctus grimaldii* worldwide (Froese & Pauly, 2011)

A single specimen of *Opisthoproctus grimaldii* was caught with a beam-trawl in Pipoca Mud volcano during the "INDEMARES-CHICA 0211" cruise (28 mm SL, 616-625 m, IEO-CD-CH11/505). Other species collected were the fish *Nezumia aequalis;* the crustaceans *Nephrops norvergicus* and *Ergasticus clouei*; the mollusc *Bathyarca philippiana*; the cnidarians *Kophobelemnon stelliferum, Funiculina quadrangularis* and *Isidella elongata,* and the porifera *Thenea muricata.*

Diagnosis

Body laterally compressed and rather short, silvery in colour. Eyes tubular. Snout long, more than 20 % of the standard length. Ventral fin origin posterior to dorsal fin origin. Belly with a flat sole. Ventral surface of rear part of sole with 4 dark blotches. Dorsal adipose fin present.

Distribution

This species shows a wide scattered distribution worldwide. In the north-western Atlantic and western Pacific has been mostly recorded in the subtropical region. In the eastern Atlantic has been mainly found in the tropical region with a few records off Portugal, Madeira, Azores and the Canary islands.

Syngnathidae
Syngnathinae
Minyichthys sentus Dawson, 1982

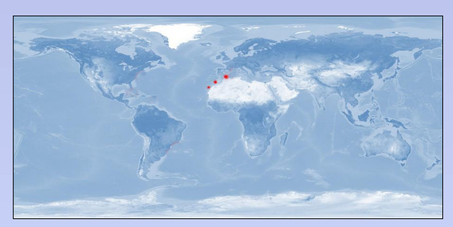
One specimen of this small Syngnatidae, recently described by Dawson in 1982, was caught with an otter-trawl during the "ARSA 0311" (March 2011) (41 mm SL, 67-74 m, IEO-CD-AR11/508). Other species of the benthic-demersal community were the fishes *Merluccius merluccius, Serranus hepatus* and *Lesueurigobius sanzi;* the crustacean *Parapenaeus longirostris*; the molluscs *Alloteuthis media, Eledone moschata* and *Loligo vulgaris*, and the echinoderms *Astropecten irregularis* and *Brissopsis lyrifera.*

Diagnosis

Body slender and elongate without a prehensile tail and armoured by dermal plates arranged to form a serie of rings: Trunk rings: 20 and tail rings: 41; dorsal finrays: 23; pectoral finrays: 9.

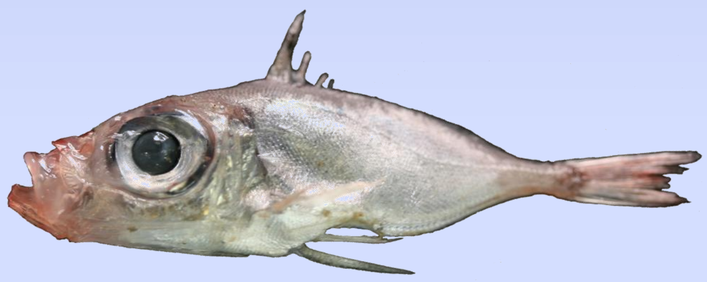
Distribution

This species was only known in the eastern Atlantic from off Morocco and the Canary Islands and from off Algeria in the western Mediterranean. Our record extends nothwards the distribution area of this species to the Gulf of Cádiz.



Distribution map of *Minyichthys sentus* worldwide (Froese & Pauly, 2011)

Zenionidae
Zenion hololepis (Goode & Bean, 1896)



A single specimen of *Zenion hololepis* was also caught with an otter-trawl during the "ARSA 0311" cruise (54 mm SL, 478-483 m, IEO-CD-AR11/509). Other species of the community were the fishes *Chimaera monstrosa, Nezumia aequalis, Etmopterus spinax, Gnatophis mystax, Galeus melastomus and Micromesistius poutassou;* the crustaceans *Parapenaeus longirostris, Chlorotocus crassicornis, Solenocera membranacea* and *Pasiphaea sivado*; the molluscs *Galeodea rugosa, Illex coindetti* and *Sepietta oweniana*, and the echinoderms *Centrostephanus longispinus, Cidarias cidaris, Echinus acutus, Luidia sarsi* and *Leptometra phalangium.*

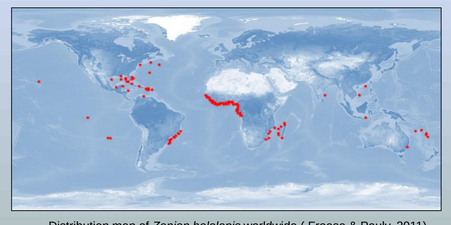
Diagnosis

Body elongated, reddish in color. Dorsal spines: 6; dorsal soft rays: 25; anal spines: 1; anal soft rays: 23; ventral spines: 1; ventral soft rays: 6.

Distribution

Zenion hololepis displays a circumglobal distribution, generally in tropical and subtropical areas. In the eastern Atlantic seems restricted to the African coasts, being particularly common in the Gulf of Guinea.

This species has not been previously reported in European waters in "Fishes of the north-eastern Atlantic and the Mediterranean" (Whitehead *et al.*, 1986) and our specimen may represent the first record for Europe. The presence of *Z. hololepis* in the Gulf of Cádiz could be due to a northward migration from the african coast or to a west-east movement from the other side of the Atlantic.



Distribution map of *Zenion hololepis* worldwide (Froese & Pauly, 2011)

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